

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Final Rule To Determine *Buxus Vahlia* (Vahl's Boxwood) as an Endangered Species

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Service determines a plant, *Buxus vahlia* (Vahl's boxwood), to be an endangered species. *Buxus vahlia* is only found in the semievergreen seasonal forests that occur on limestone in north and northwestern Puerto Rico. Only about 40 individuals of the species are known to exist. Of the two locales that support populations of *Buxus vahlia*, one is on public land of the Commonwealth of Puerto Rico and the other is on privately owned land. The continued existence of this species is endangered by its very limited numbers and range, potential habitat modification or destruction due to limestone mining and urbanization in the privately owned locale, and possible construction of a coal-fueled power plant on the government land. This final rule will implement the protection provided by the Endangered Species Act of 1973, as amended, for *Buxus vahlia*.

DATE: The effective date of this rule is September 12, 1985.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Banco de Ponce Building, Dr. Basora and Mendez Vigo Streets, P.O. Box 3005—Marina Station, Mayagüez, Puerto Rico 00709, and at the Service's Regional Office, Richard B. Russell Federal Building, Room 1282, 75 Spring Street, S.W., Atlanta, Georgia 30303.

FOR FURTHER INFORMATION CONTACT: Mr. Robert T. Pace at the above Mayagüez address (809/833-5760) or Mr. Richard P. Ingram at the above Atlanta Regional Office address (404/221-3583 or FTS 242-3583).

SUPPLEMENTARY INFORMATION:**Background**

When and where the first collections of *Buxus vahlia* were made is not known. It was first identified, incorrectly, as *Crantzia laevigata* (= *Buxus laevigata*) by Vahl in 1791, and later correctly described as a new species by Baillon in 1859. The range of the species has been a matter of discussion since that time. Although it was originally thought to occur in St. Croix, U.S. Virgin Islands, as well as in Puerto Rico, this no longer appears to be correct. *Buxus vahlia* has not been collected in St. Croix by any botanist in recent times. Examination by Puerto Rican botanists of specimens of the genus *Buxus* collected on St. Croix (including the type of *Tricera laevigata* var. *sanctae-crucis*) showed that none could be attributed to *Buxus vahlia* (Vivaldi and Woodbury, 1981). An early report listing Jamaica as part of *Buxus vahlia*'s distribution has never been confirmed (Little *et al.*, 1974); *B. laevigata* does occur in Jamaica. Thus, *Buxus Vahlia* is now considered to be endemic to Puerto Rico.

Buxus vahlia is an evergreen shrub or small tree up to 15 feet (4.6 m) tall with stems up to 3 inches (7.6 cm) thick. The twigs have two characteristic grooves below each pair of leaves. The entire plant is hairless. The more or less oblong leaves are simple, opposite, dark shiny green, up to 1.5 inches (3.8 cm) long and ¼ inch (1.9 cm) wide. *Buxus vahlia* does not reproduce vegetatively; flowering is in December to early April. The flower cluster is small, about ¼ inch (0.6 cm) long, with the solitary female flower at the tip and several male flowers born just below it. The fruit is a horned capsule.

Buxus vahlia is found in semievergreen seasonal forests on limestone at elevations between 82 and 656 feet (25 and 200 m) in Hato Tejas (Bayamón) and in Punta Higüero (Rincón) about 70 miles away. The site at Rincón in northwestern Puerto Rico may have been known to Sintonis in 1886, while the other at Hato Tejas in north-central Puerto Rico was discovered in the 1950's by Roy O. Woodbury. A specimen collected by Heller in 1902 from "Limestone hills along the coast 3 miles west of Ponce" had been mislabeled. This area is occupied by dry woodlands very different from the semievergreen forests in which *Buxus vahlia* is found, and both Woodbury and Vivaldi have done field work in the area and agree that it is very unlikely that *Buxus vahlia* could occur there. Similar label errors have been found with another species collected by Heller.

Buxus vahlia was recommended for Federal listing by the Smithsonian Institution (Ayensu and DeFilipps, 1978). In August 1979, The Service contracted with Dr. José L. Vivaldi, a resident botanist of Puerto Rico, to conduct a status survey of some plants thought to be candidates for listing as endangered

or threatened in Puerto Rico and the Virgin Islands. Reports and documentation resulting from this survey indicated that *Buxus vahlii* should be proposed for listing as an endangered species. On December 15 1980, the Service published a notice in the *Federal Register* (45 FR 82480) naming those plant taxa being considered for listing as endangered or threatened species: *Buxus vahlii* was included.

In a notice published in the *Federal Register* on February 15, 1983 (48 FR 6752), the service reported the earlier acceptance of the new taxa in the Smithsonian's 1978 book as under petition within the context of section 4(b)(3)(A) of the Act, as amended in 1982. The Service subsequently found that listing *Buxus vahlii* was warranted but precluded by other pending listing actions, in accordance with section 4(b)(3)(B)(iii) of the Act; notification of the finding was published in the January 20, 1984 *Federal Register* (49 FR 2485). An additional petition finding required in accordance with section 4(b)(3)(B)(ii) of the Act, was incorporated in the proposed rule for this species. The Service proposed to list *Buxus vahlii* as an endangered species in the July 13, 1984, *Federal Register* (49 FR 28580).

Summary of Comments and Recommendations

In the July 13, 1984, proposed rule (49 FR 28580) and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate Commonwealth of Puerto Rico agencies, municipal governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. Newspaper notices that invited general public comment were published in *The San Juan Star* (in English) on July 29, 1984, and in *El Nuevo Dia* (in Spanish) on July 30, 1984. Three comments were received and are discussed below. No public hearing was requested, and therefore none was held.

A concerned citizen wrote on July 31, 1984, in support of the proposed listing and requested a drawing of the plant. The Service replied on August 8, 1984, by sending general information and a drawing of the plant.

Dr. José Vivaldi, Director of the Terrestrial Ecology Division of the Puerto Rico Department of Natural Resources, wrote on August 7, 1984, stating that he was in favor of listing *Buxus vahlii* as endangered, but considered the Service's decision not to designate critical habitat to be "ill-

advised." The Service responds that designation of critical habitat is not prudent because publication of the exact location of the few remaining plants could lead to taking or vandalism.

Juan A. Bonnet, Jr., Director of the Center for Energy and Environment Research of the University of Puerto Rico, responded on August 21, 1984, that fire is a significant threat to the species. During the dry season, the Punta Higüero area of Rincón is susceptible to fire. The intense use of the beach by campers and surfers has resulted in accidental fires which could spread to the location of the *Buxus* plants. Fire has been added as a potential threat to the species in this final rule.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Buxus vahlii* should be listed as an endangered species. Procedures found at section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations promulgated to implement the listing provisions of the Act (codified at 50 CFR Part 424) were followed. A species may be determined to be an endangered or a threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Buxus vahlii* Baillon (Vahl's boxwood) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The Rincón site, which is public land of the Commonwealth of Puerto Rico, has been proposed as a possible locale (although now not the preferred locale) for the construction of a coal-fueled power plant to be constructed by the Puerto Rico Electrical Power Authority and the Federal Rural Electrification Administration. The power plant would require a large storage area for the coal and cinder. To make such space, part of the property, perhaps including the ravine or its drainage area, might be utilized. This could destroy the 12 to 20 plants and their habitat, modify their habitat by changing the drainage pattern in the ravine, or introduce pollutants leached from the coal or cinders. Air pollution from the power plant could also affect the species.

The beach near the Rincón site is used intensively by surfers and campers, and is periodically used for music festivals. During the dry season (January to April), accidental fires sometimes occur, which could possibly spread to the habitat of *Buxus vahlii*.

The Hato Tejas population of about 24 individuals is located on private land in a group of "haystack" hills (limestone hills with a characteristic haystack shape) that is surrounded by a large shopping center and several commercial and industrial lots. A possible place for expanded development would be the area now occupied by the hills, which could be razed and sold for limestone or fill material. These activities would result in the complete destruction of the habitat; however, there are no known plans for development at present. This population of *Buxus vahlii* is located on the edge of an old limestone quarry. Past mining activities in the area have resulted in the destruction of more than half of the boxwood population since the 1950's (Vivaldi and Woodbury, 1981). The quarry is not active at this time, but could become active if such activities again become profitable.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* Taking has not been a documented factor in the decline of this species, but could easily become so in the future. Both populations are accessible by road and trail. Boxwoods are beautiful shrubs, and several species are grown in cultivation around the world. There is a society devoted to cultivation of the genus. This species may have ornamental potential (Little *et al.*, 1974), and professional cultivation of the species is being attempted.

C. *Disease or predation.* There are many houses on private property on the eastern edge of the government property at the Rincón site, and only about 300 feet from the *Buxus vahlii* population. Some of the residents keep goats, which could affect the boxwood if they were allowed to roam free or escaped into the public area.

D. *The inadequacy of existing regulatory mechanism.* The Commonwealth of Puerto Rico does not have specific legislation or rules to protect endangered or threatened plant species, although a list of vulnerable species exists that includes *Buxus vahlii*.

E. *Other natural or manmade factors affecting its continued existence.* *Buxus vahlii* is found in two small, compact, isolated populations separated by about 70 miles. It has a very narrow ecological niche and is restricted to ravines and ledges in semievergreen seasonal forests on limestone. Only about 40 individuals are known (about half in each population), a reduction from over 60 known individuals in the 1950's. A loss of genetic variation in the species is therefore probable. In addition, seedlings have not been observed.

These factors increase the vulnerability of the species to the other threats described above.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to make this rule final. Based on this evaluation, the preferred action is to list *Buxus vahlii* as an endangered species. With so few individuals known and the risk of damage to the plant and/or its habitat so high, endangered rather than threatened status seems an accurate assessment of the species' condition. It is not prudent to propose critical habitat because doing so would increase the risk for the species as detailed below.

Critical Habitat

Section 4(a)(3) of the Endangered Species Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. The Service finds that designation of critical habitat for *Buxus vahlii* is not prudent at this time.

As discussed under threat factor "B" above, *Buxus vahlii* is potentially threatened by collecting, an activity regulated by the Endangered Species Act with respect to plants only on lands under Federal jurisdiction; such lands are not involved in this determination. Publication of critical habitat localities would increase the risk of taking or vandalism. The extreme vulnerability of *Buxus vahlii* to collecting would make any collecting quite detrimental to the survival of the species. Thus, determination of critical habitat for *Buxus vahlii* would not be prudent at this time.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by other Federal, Commonwealth, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the Commonwealth and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required by Federal agencies and the prohibitions against taking are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402 and are now under revision (see proposal at 48 FR 29990; June 29, 1983). Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat, if any is designated. If a Federal action may affect a listed species, the responsible Federal agency must enter into formal consultation with the Service. The only potential Federal involvement known at this time is that of the Rural Electrification Administration, at the locality near Rincón. In the event that the Punta Higüero site (which is now not preferred) were chosen for the coal-fueled power plant sponsored by the Puerto Rico Electrical Power Authority and the Federal Rural Electrification Administration, a specific commitment would be needed to protect *Buxus vahlii*. If the site were to be chosen, the species could be affected in various ways, as discussed above.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general trade prohibitions and exceptions that apply to all endangered plant species. With respect to *Buxus vahlii*, all trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, or sell or offer for sale this species in interstate or foreign commerce. Certain exceptions can apply to agents of the Service and Commonwealth conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered species under certain circumstances. International trade and interstate commercial trade in *Buxus vahlii* are not known to exist, and the plant is very rare in experimental cultivation. It is anticipated that few permits involving plants of wild origin will ever be requested.

Section 9(a)(2)(B) of the Act, as amended in 1982, prohibits the removal and reduction to possession of endangered plant species from areas under Federal jurisdiction. This

prohibition now applies to *Buxus vahlii*. Permits for exceptions to this prohibition are available through section 10(a) of the Act, until revised regulations are promulgated to incorporate the 1982 Amendments. Proposed regulations implementing this new prohibition were published on July 8, 1983 (48 FR 31417), and it is anticipated that these will be made final following public comment. *Buxus vahlii* is not known to occur on any Federal lands at this time, so requests for collecting permits are not anticipated. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240 (703/235-1903).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined by the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the *Federal Register* on October 25, 1983 (48 FR 49244).

Literature Cited

- Ayensu, E.S., and R.A. DeFilipps. 1978. Endangered and Threatened Plants of the United States. Smithsonian Institution and World Wildlife Fund, Washington, D.C. xv + 403 pp.
- Baillon, M.H. 1859. Monographie des Buxacées. Paris.
- Britton, N.L., and P. Wilson. 1923. Botany of Porto Rico and the Virgin Islands, In: Scientific Survey of Porto Rico and the Virgin Islands, Vols. 5 and 6. New York Acad. Sci., New York.
- Little, E.L., Jr., R.O. Woodbury, and F.H. Wadsworth. 1974. Trees of Puerto Rico and the Virgin Islands, Vol. 2 U.S. Dept. Agric., Forest Service Agric. Handbook No. 449, Washington, D.C. 1024 pp.
- Vivaldi, J.L., and R.O. Woodbury. 1981. *Buxus vahlii* Baill. Updated species report submitted to the Fish and Wildlife Service, Mayagüez, Puerto Rico. 59 pp.

Author

The primary author of this final rule is Mr. Robert T. Pace, U.S. Fish and Wildlife Service, Mayagüez Field Station, P.O. Box 3005—Marina Station, Mayagüez, Puerto Rico 00709-3005 (809/833-5760). Status information and preliminary listing documents were provided by Dr. José L. Vivaldi, 1904 Cond. Parque de Las Fuentes, Hato Rey, Puerto Rico 00918. Dr. George E. Drewry of the Service's Washington Office of Endangered Species served as editor.

List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife,
Fish, Marine mammals, Plants
(agriculture).

Regulation Promulgation**PART 17—[AMENDED]**

Accordingly, Part 17, Subchapter B of
Chapter I, Title 50 of the Code of Federal

Regulations, is amended as set forth
below:

1. The authority citation for Part 17
continues to read as follows:

Authority: Pub. L. 93-205, 87 Stat. 884; Pub.
L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat.
3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-
304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

2. Amend § 17.12(h) by adding the
following, in alphabetical order, to the

List of Endangered and Threatened
Plants:

**§ 17.12 Endangered and threatened
plants.**

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(h) * * *

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Buxaceae—boxwood family: <i>Buxus vahlil</i>	Vahl's boxwood	U.S.A. (PR)	E	194	NA	NA

Dated: July 30, 1985.

Susan E. Reece,

Acting Assistant Secretary for Fish and
Wildlife and Parks.

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